FORCE HEALTH PROTECTION: A GUIDE TO STAYING HEALTH ON THE PENINSULA

PRE-DEPLOYMENT TRAINING

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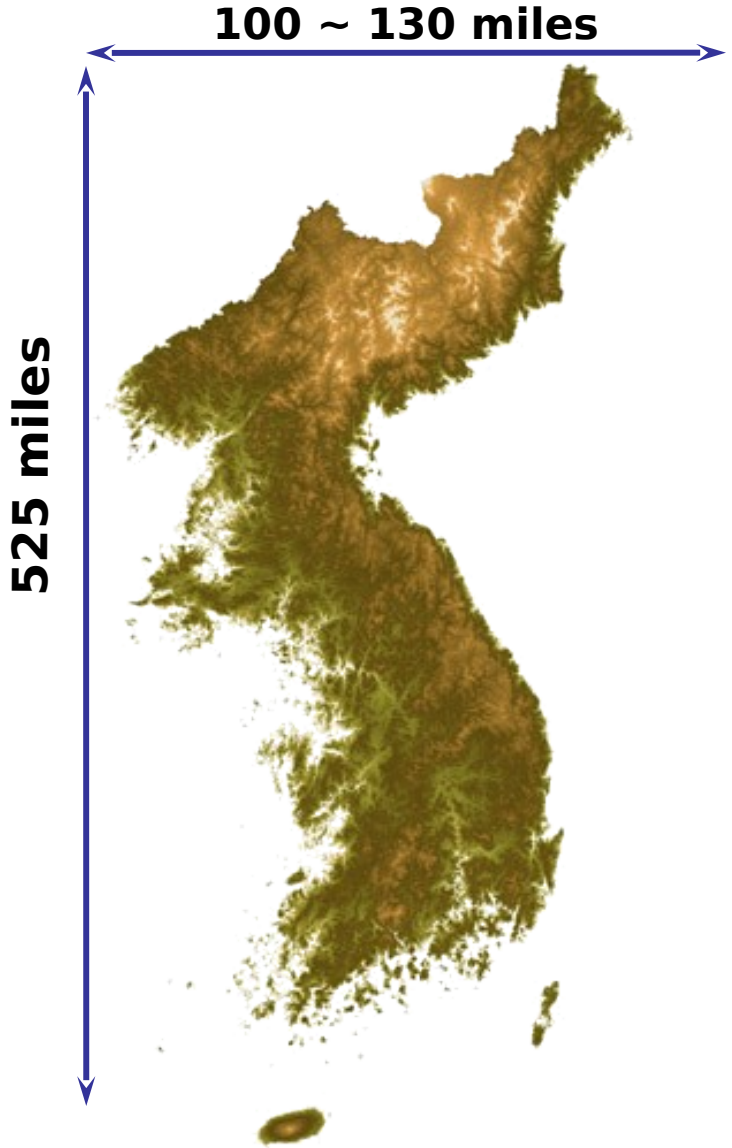
Overview

- Korea Climate
- Climatic Threats
- Disease Threats
- Vector-Borne Diseases
- Food-Borne Diseases
- Contagious & Sexually Transmitted Diseases
- Toxic Industrial Chemicals & Materials
- Immunization Requirements
- Summary

Korea is……

- Rugged and mountainous (70% of land mass), mostly along the east coast and the north central interior
- 20% suitable for agriculture
- Total Area : 220.847 Km^2 (Same as Minnesota)
  - North Korea same as Louisiana
  - South Korea same as Virginia



Korean Climate

Climate Considerations

- Continental Climate
  - Very large temperature differences between seasons
- 4 distinct seasons
  - Winter : cold, dry, windy
  - Spring : warm
  - Summer : hot, humid, rainy
  - Autumn : mild
- Heavy monsoon rains and typhoons
  - June through August

Climatic Threats

- Cold
- Heat
- Humidity
- Yellow Sand
- Flood
- Typhoon

Climatic Threats

Cold Injuries

- Snow Blindness
- Frostbite
- Chilblains
- Immersion foot (Trench foot)
- Hypothermia

Heat Injuries

- Sunburn
- Heat Cramps
- Heat Exhaustion
- Heat Stroke

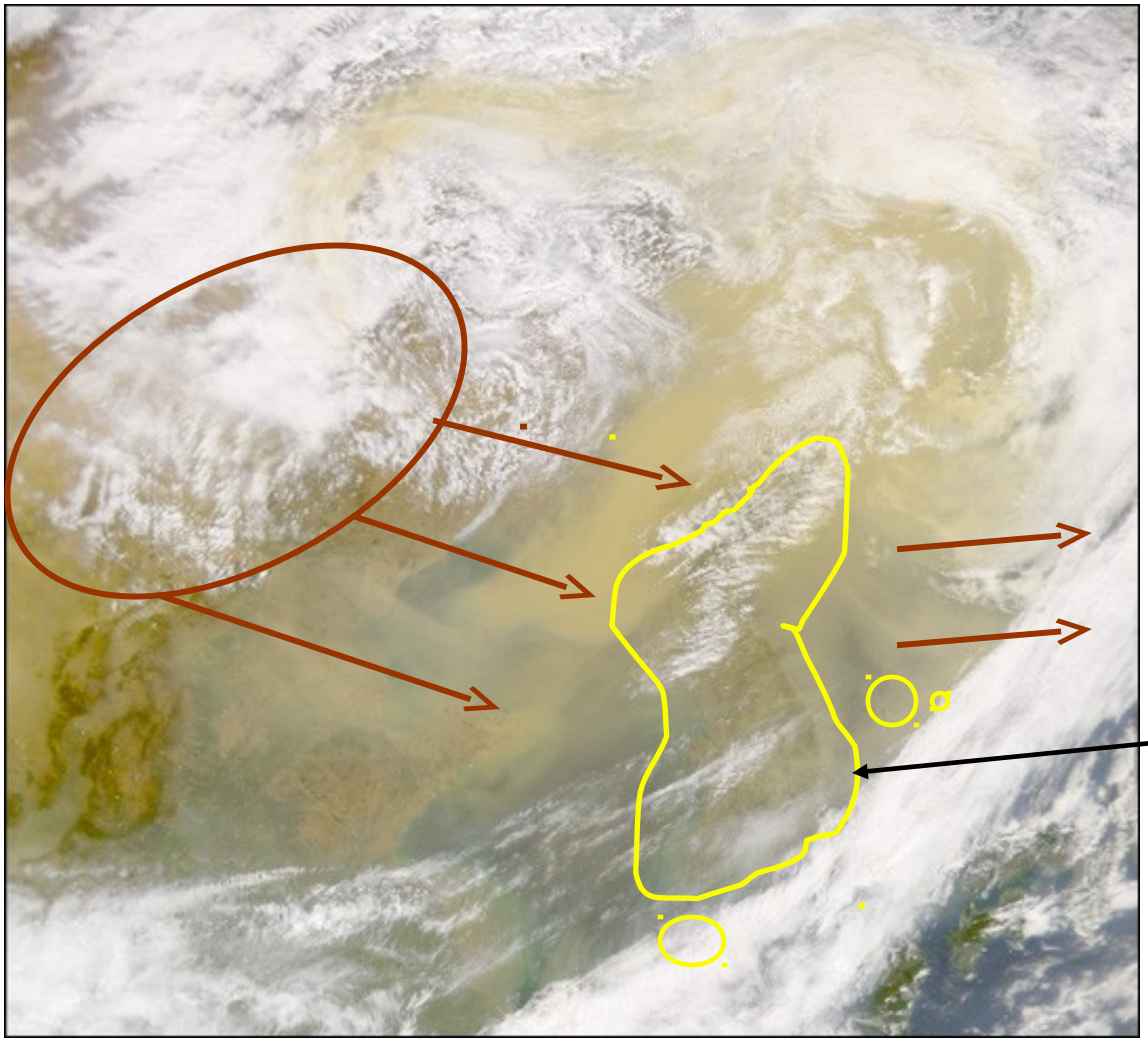
Humidity

- Winter dry air – Upper Respiratory Infections
- Summer humid air- Molds and fungi--Increasing Irritability Index

Yellow Sand

- **Origin**
  - **Deserts of China, Mongolia and Manchuria (e.g., Gobi desert and Takla Makan desert)**
- **Components**
  - **Dust ~ sand**
  - **Pollutants from industrialization of China**
    - **Silicon, cadmium, arsenic, lead, copper, aluminum and other heavy metals**

Yellow Sand



China→

Korea →

Japan

Yellow Sand

- Season
  - March to May
  - Extending year round
  - Lasts average of 3 to 5 days, up to 27 days
- Conveyance
  - Westerly jet stream
    - Higher than 5 km (16500 ft) above sea level in northern hemisphere
  - May extend to Hawaii, west coast, and central U.S.
- Health effects
  - Respiratory problems
    - Allergic rhinitis
    - Asthma
    - Upper Respiratory Infections
  - Eye problems
    - Allergic conjunctivitis
  - Other problems on mucous membranes and skin
  - Virus, Bacteria and Fungi infections
    - Foot and mouth disease

Yellow Sand

Preventive Measures

- **Limit outdoor activities**
- **Close windows**
- **Wear long sleeves**
- **Cover mouth and nose**
- **Do not drink or eat food outside**
- **Wear glasses instead of contact lens**
- **Wash eyes, mouth and exposed skin after coming in from the outside**
- **Drink water frequently**
- **Review Yellow Sand levels and modify outdoor activities accordingly**

Yellow Sand Monitoring Information:

The 18th Medical Command maintains a real-time dust level monitoring systems throughout the Peninsula. Information on dust levels can be found at:
http://www.seoul.amedd.army.mil/sub/highlight/n_view.asp?num=33

Typhoon

- 91% from July to August
- Tropical cyclone
- Tropical atmospheric depression
  - Minimum central wind velocity = 17 m/sec
  - Torrential rain
  - Strong winds

Disease Threat

- South Korea is classified as an INTERMEDIATE RISK for infectious diseases. All diseases are preventable when force health protection measures are followed.

Diseases of Greatest Risk

- Bacterial Diarrhea (travelers' diarrhea)-- a food- or water-borne disease
- Hemorrhagic Fever- a disease that is spread in poorly ventilated, rodent-infested areas.
- Malaria-- a major vector-borne (insect-borne) disease transmitted through the bite of a mosquito that is carrying the disease.
- Typhoid/Paratyphoid Fever-- a food or water-borne disease contracted when you eat food or drink water, ice or milk contaminated with the disease.
- Hepatitis A-- a food- or water-borne disease contracted when you eat food or drink water, ice or milk contaminated with the disease.

Vector-Borne Diseases

Vector-Borne Disease Risks

- In addition to malaria, other vector-borne diseases of lesser risk do exist. These include Japanese Encephalitis from mosquitoes; Lyme Disease from ticks; Murine (flea-borne) Typhus from fleas; and Mite-borne (scrub) Typhus from mites. Vector-borne diseases are a greater threat from May to October than at other time of the year. There may be other diseases spread by various insects and ticks.

Prevention

- Use the DOD Insect Repellent System to reduce your risk of acquiring a vector-borne disease. Wear permethrin-treated uniforms with trousers tucked into boots, sleeves rolled down, and undershirt tucked into trousers. Wear DEET on exposed skin.
- Sleep under a permethrin-treated bed net to repel insects and further reduce risks of vector-borne diseases. Many insects in this region feed during the night, including mosquitoes that transmit malaria.
- When using both DEET and sunscreen products, apply sunscreen to the skin first so it does not interfere with the effectiveness of the DEET. After 30 minutes to an hour, apply the DEET. This allows the sunscreen to penetrate and bind to the skin first.
- Take malaria prevention pills when directed to do so. This is CRITICAL.

Food-Borne & Water-Borne Diseases

Food-Borne & Water-Borne Disease Risks

- In addition to Bacterial Diarrhea, Hepatitis A and Typhoid/Paratyphoid Fever, other food-borne diseases of lesser risk do exist. These include Brucellosis, Cholera, Hepatitis E, Protozoal Diarrhea and Neurotoxic and Paralytic Shellfish poisoning. In addition, there is a risk of contracting leptospirosis from swimming or wading in contaminated water.

Prevention

- Assume all non-approved food, ice, and water is contaminated. You should not drink local tap water, fountain drinks or ice cubes. Do not eat any food or drink any water or beverages (including bottled water) that have not been approved by the U.S. military as they may be contaminated. Even a one-time consumption of these foods or water may cause severe illness.
- To help prevent contracting Leptospirosis, do not swim or wade in water that has not been treated with chlorine. If you must be exposed to non-chlorinated water, wear protective clothing and footwear.

Hazardous Animals & Plants

Hazardous Animals & Plants Risks

- Rabies is the greatest health threat from animals in the Korean Peninsula. Contracting Rabies is rare but it does occur. Cattle and stray dogs are the main source of Rabies on the Korean Peninsula. You can be exposed to Rabies through bites or, more rarely, when infected saliva contacts wounds or moist membranes, such as the nose or eyes. All Rabies cases are lethal.
- Cattle, sheep, and goats are the primary carriers of Q Fever, but Q Fever can be found in a wide variety of other animals, including other breeds of livestock and domesticated pets. Organisms are excreted in milk, urine, feces and amniotic fluid of infected animals. Infection of humans usually occurs by inhalation of airborne barnyard dust that is contaminated with infected material.
- At least four species of venomous snakes, which are well camouflaged and have highly toxic venom, can be found on the Korean Peninsula.
- Spiders and scorpions of the region are capable of painful bites and stings that cause swelling, local tenderness, or necrotic lesions (dead tissue). The sting of one scorpion can be life-threatening.

Hazardous Animals & Plants

Hazardous Animals & Plants Risks (continued)

- Some caterpillars in the region have spines that are poisonous. When crushed, some beetles emit body fluids that can produce blisters and temporary blindness.
- Some plants have thorns, stinging hairs, or toxic sap that may puncture the skin or introduce poison into the skin causing skin irritation, rashes or infections. Avoid skin contact with plants when possible.
- Some regional plants may cause systemic poisoning if leaves, berries, flowers, or other plant parts are chewed or swallowed. Some regional plants have fruits that resemble edible varieties, but contain dangerous compounds and are extremely poisonous if eaten. Poisonous milk may occur if cows eat white snakeroot, a plant commonly found in this region. Symptoms include dizziness, vomiting, irregular heartbeat, and delirium or hallucinations.
- Contact with the smoke from the burning of harmful plants can also cause skin rashes and damage to your lungs.

Prevention

- Do not make contact with animals
- Consider any snake encountered as poisonous, and do not handle
- Shake out boots, bedding, and clothing prior to use
- Clean clothing after contact with harmful plants

Contagious and Sexually Transmitted Diseases

Contagious & Sexually Transmitted Disease Risks_

- There is a risk of being exposed to the bacteria that causes Tuberculosis (TB). Breathing in the bacteria that someone coughed or sneezed into the air spreads TB.
- Sexually Transmitted Diseases (STD), such as Gonorrhea, Chlamydia, Human Immunodeficiency Virus (HIV)/Acquired Immune Deficiency Syndrome (AIDS) and Hepatitis B, occur throughout the region. Though the immediate impact of HIV/AIDS and Hepatitis B on an operation is limited, the long-term impact on your individual health is great.

Prevention

- TB prevention--Annual PPD skin test
- STD prevention--Anyone deployed to the region should not have unprotected sex and should not share needles.

Toxic Industrial Chemicals & Materials

- When deployed, you may face health risks from industrial chemicals and materials as a result of accidents in industrial facilities; accidental exposure to toxic waste; or improper handling or disposal of hazardous material with which our own forces deploy.
- Due to agriculture and industry, the environment in South Korea tends to be slightly more polluted than U.S. standards would permit. Because North Korea still burns coal for energy, the air tends to be very polluted. In addition, rivers and water sources have become contaminated. How much the environment will affect your health depends on many things. Consult your medical authority for additional information.

Complete All Required Immunizations

All routine immunizations should be current to include:

- **Tetanus diphtheria**
- **Hepatitis A**
- **Hepatitis B (as required by occupation)**
- **Typhoid**
- **Measles, Mumps & Rubella (MMR)**
- **Polio**
- **Smallpox (per DoD guidance)**
- **Influenza**
- **PPD**
- **Anthrax**
  - **Required for uniformed personnel assigned to the Korean Peninsula for 15 or more consecutive days.**

Summary

- Maintain good general health and hygiene
- Complete all required immunizations
- Take required preventive medications
- Wear protective clothing and repellant
- Avoid health threats
- Promptly mitigate adverse effects
- We never leave a fallen comrade; however more military members fall from Disease Non-Battle Injuries (DNBIs). This is a fall that is preventable!